UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

KAIFI LLC,

Plaintiff,

v.

VERIZON COMMUNICATIONS INC., et al,

Defendants.

Case No. 2:20-CV-280-JRG

JURY TRIAL DEMANDED

Honorable Rodney Gilstrap

OPENING CLAIM CONSTRUCTION BRIEF BY KAIFI LLC

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Exhibit 1-C	Excerpted Internet Engineering Task Force, RFC 2002, October 1996
Exhibit 2-A	Thomas Blackburn Curriculum Vitae
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Exhibit 2-C	Excerpted https://en.wikipedia.org/wiki/OSI_model
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Exhibit 2-E	3GPP Technical Specification 22.121 v4.0.0, "The Virtual Home Environment (Release 4)," October 2000
Exhibit 2-F	"Distributed Router Architecture For Packet Routed Optical Networks," Proc. 14th Working Conference on ONDM 2000, February 2000
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Plaintiff KAIFI LLC ("KAIFI") hereby submits its opening claim construction brief for U.S. Patent No. 6,922,728 ("'728 Patent").

I. INTRODUCTION

The '728 Patent provides an optimal internet network connecting and roaming system and method adapted for a user moving in and out of heterogeneous networks. The claimed invention enables automatic and uninterrupted switching of communication services between different network types, an indoor network (Wi-Fi) and an outdoor wireless internet network (cellular). By off-loading services from a higher cost cellular network to a lower cost Wi-Fi network in a seamless manner, companies like Verizon and T-Mobile save significant costs while providing the connectivity experience expected by their subscribers today.

KAIFI submitted an Opening Claim Construction Brief in *KAIFI LLC v. T-Mobile US, Inc.*, Case No. 2:20-CV-281-JRG (the "T-Mobile Case") setting forth a detailed summary and background of the '728 Patent. *See* T-Mobile Case, Dkt. 135. KAIFI and Verizon dispute the construction of many of the same terms as those disputed in the T-Mobile Case. As such, to streamline the proceedings and conserve the resources of the parties and the Court, KAIFI and Verizon submitted a joint motion in which they proposed consolidating the claim construction hearing in this action with the hearing in the T-Mobile Case, and further agreed that the claim constructions issued by the Court in the T-Mobile Case will be applicable here. *See* Dkt. 52 (Joint Motion to Consolidate Claim Construction Hearings And To Amend DCO For Claim Construction Briefing). KAIFI therefore incorporates by reference the contents of its opening and reply briefs from the T-Mobile Case as if set forth fully herein. Given the parties' agreement regarding the disputed terms in the T-Mobile Case, this brief focuses solely on the two disputed terms that are unique to this case, as set forth below.

II. DISPUTED TERMS

A. Term A: "selecting one of the indoor and the outdoor networks in accordance with the determined location of the data communication terminal"

KAIFI's Proposed Construction	Verizon's Proposed Construction
No additional construction needed	"selecting one of the indoor and outdoor networks based on the determined location stored in the location register of the data communication terminal"

Verizon is asking the Court to import a new limitation into the claim requiring that the location information used in the claimed system is "stored in the location register of the data communication terminal" as opposed to stored in a location register located elsewhere in the system, or partially stored in a distributed location register. Verizon's proposed additional limitation is shown in bold below:

> selecting one of the indoor and the outdoor networks in accordance with the determined location **stored in the location register** of the data communication terminal

This is contrasted with T-Mobile, which is seeking a construction that the location register must be "external" to the data communication terminal. Two separate sets of defendants are taking two completely opposite positions, one requiring that the location register be only on the data communication terminal (Verizon) and one requiring that the location register access no stored information on the terminal (T-Mobile).

The Court previously construed the term "location register" to mean "register that records the location of the data communication terminal," and the term "location information" to mean "information on a locational area or indoor system ID information or both." *See KAIFI LLC v. AT&T Corp.*, et al.; Case No. 2:19-cv-00138-JRG (the "AT&T Case"), Dkt. No. 104 at p. 36, 42. Neither of the Court's constructions place any limit on the physical location of the location register.

1. The Claim Language Does Not Support Verizon's Construction

The claims recite "a location register that stores location information of the data communication terminal received through the indoor network or outdoor wireless internet network[.]" There is no language specifying a particular physical location or locations for the location register. This is not an accident. When the patent wants to describe one structure as having to be located within another structure it expressly states this. For example, the claims recite "an indoor gateway that includes an indoor wireless connection module ***therein***[.]" (emphasis added). *See* Declaration of Matthew Hawkinson (Verizon) In Support Opening Claim Construction Brief By KAIFI ("Hawkinson Verizon Decl.") at ¶ 2, Ex. 1-A, '728 Patent, Cl. 1.

2. The Specification Places No Limits on the Location of the Location Register

In Figures 1 and 2 the location register is definitively not a single physical structure present in any one required location: "HA/FA Location Register" in block 80 refers to two different pieces of software that in normal operation can run on different computers. T-Mobile's expert admitted this. Hawkinson Verizon Decl. at ¶ 2, Ex. 1-B, ("Rysavy Dep.") at 82:14-21 ("I do know that in some situations the home agent and foreign agent are at different locations.").

"FIGS. 1A and 1B are diagrams illustrating examples of the configuration of an outdoor wireless internet network employed in the present invention." '728 Patent at 4:28-31. In this embodiment, there is no statement that the location register cannot access information stored on the terminal. The terminal joins the internet via "the outdoor wireless LAN" and "the location information of the terminal 10 is stored in the location register 80." *Id*. at 7:28-43. There is no limitation regarding the placement of the location register.

Figure 2 is described as "an embodiment of the present invention." Federal Circuit precedent makes clear that this language affirms that the embodiment is not limiting. *Teleflex,*

Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1327 (Fed.Cir.2002) ("Even when the specification describes only a single embodiment, the claims of the patent will not be read restrictively…").

> FIG. 2 is a diagram showing the configuration of an optimal wireless internet network connecting and roaming system adapted for a user who moves outdoors or indoors according to an embodiment of the present invention

'728 Patent at 4:35-38. The discussion of Figure 2 makes clear that there is an "indoor network" and "an external network" (*i.e.*, an outdoor network).

> …an indoor network including an indoor gateway 100; and an external network including the location register 80, the internet 50 including a plurality of internet servers, a VoIP gateway 60 and a PSTN.

'728 Patent at 8:39-43. In the Figure 2 embodiment the location register is "the home agent HA or the foreign agent FA which operates in accordance with the mobile IP protocol." *Id.* at 9:12-15. T-Mobile's expert claims that this language references an extrinsic source – the "mobile IP protocol" that existed as of the filing date of the patent. Dkt. 139-2 ("Rysavy Decl.") at ¶ 47. This document makes clear that there is no limitation on the location of the home agent or foreign agent. It can be on any node of the network. Hawkinson Verizon Decl. at ¶ 4, Ex. 1-C, IETF RFC 2002 at 10 ("Other placements of the home agent relative to the mobile node's home location MAY also be possible…"); *see also* T-Mobile Case, Dkt. 135, (Opening Claim Construction Brief By KAIFI) at 10 and T-Mobile Case Dkt. 135-9 (Declaration Of Thomas Blackburn In Support Of Opening Claim Construction Brief By KAIFI) at ¶ 61. T-Mobile's expert testified to exactly what a POSA would take from the "mobile IP protocol" referenced in the specification (and which he extensively relied on in his declaration):

> Q. Is there anything in the RFC 2002 specification that precludes the implementation of the home agent function and the foreign agent function in a distributed manner?
>
> A. In my relatively quick scan of the 158-page document, I didn't see a discussion of physical implementation of the home agent and foreign agent functions.

Rysavy Dep. at 49:15-23; 48:3-24 ("In scanning through the [RFC 2002] specification I didn't see a discussion of physical implementation of the function.").

KAIFI recognizes that expert opinion saying "my client is right" or parroting a construction is often unhelpful to the Court because expert testimony cannot alter the intrinsic record. But in this case the "HA/FA" from the "mobile IP protocol" is expressly identified as an embodiment of a location register. It is thus highly relevant that in the "mobile IP protocol" that existed at the filing date of the patent, the "HA/FA" was a software function in which no limits were placed on its location on the network.

The patent depicts in one embodiment the "HA/FA" in a single circle. But these are defined in the Mobile IP specification as distinct software programs. In fact, it is accepted that they can run on any general purpose computer and can be distributed across more than one network element. Declaration of Thomas Blackburn In Support Of Opening Claim Construction Brief By KAIFI (Verizon)("Blackburn Verizon Decl.") at ¶ 44, Exhibit 2-G, Y. Mao, B. Knutsson, H. Lu, and J. Smith. DHARMA: Distributed Home Agent for Robust Mobile Access. in Proc of the IEEE Infocom 2005 Conference, March 2005 at 1197-98 ("The MAs [HA or FA] can run as part of an application, or in a local proxy."; "DHARMA uses an overlay network to deploy distributed HAs.").

Consistent with the specification, a POSITA would recognize that the network functionality and/or data storage associated with the location register may be located (a) in the same physical device as the data communication terminal, (b) on a physical device separate from the data communication terminal, or (c) distributed between memory in the data communication terminal and memory in other network elements. *Id*. Simply put, the '728 Patent is not about the physical implementation layer.

At the time of the '728 Patent, the concept of distributed storage of data, as well as the distribution of network functions, across multiple physical locations was well known. Blackburn Decl. at ¶ 40. One example is the OSI model of communication, the relevant aspects of the which have been known since at least the mid-1980s. Blackburn Verizon Decl. at ¶ 41, Ex. 2-C, https://en.wikipedia.org/wiki/OSI_model. In the OSI model, the protocol layers for wireless communication may be present even if the part of the physical layer is not present. Another example can be found in some of the 3GPP standards, which describe the distribution of functions across various physical structures. Blackburn Verizon Decl. at ¶ 42, Ex. 2-D at 143 ("a network element can be characterized as a black box with pre-programmed management capabilities. With the evolution of the telecommunications industry, we see today support for distributed object architectures at the network element level"). Most network functions, like those commonly contained in routers, were known to be distributable across multiple network elements or nodes at the time of the '728 Patent. Blackburn Verizon Decl. at ¶ 43, Exhibit 2-F, M. Duser, E. Kozlovski, R. I. Killey, P. Bayvel, "Distributed router architecture for packet-routed optical networks", Proc. 14th Working Conference on ONDM 2000, February 2000, pp. 202-221. In short, a person of ordinary skill in the art at the time of the '728 Patent would be very familiar with distribution of network functions, like routing, as well as the distribution of data storage through a network – and would apply that understanding to the "location register" and "location information" described in the '728 Patent.

The claims require a "data communication terminal" that can perform "wireless" communication over two distinct networks. This is a physical structure. Although the parties have not sought construction of the term, the specification describes exactly what this physical structure must have. '728 Patent at 1:24-34. The specification makes no statement that it cannot

store location information that is used by the location register. Nor is there any statement that the terminal must store location information. There is a reason the specification does not specific the location of the location register. As T-Mobile's expert agreed, the specification and claims do not place any limits on the physical implementation of the location register:

> Q. Is there anything in the patent that expressly and unambiguously states that the location register must be in a single physical location?
>
> A. The patent read as a whole describes the location register as being a node that performs specific function. And as I said in my declaration, that function needs to be known at a -- or that function needs to be in a known networking location….

Rysavy Dep. at 35:20-36:3.

> Q. And you believe that limits it to one single physical location register?
>
> A. I don't believe the patent discusses the exact implementation of the location register.
>
> Q. Okay. And by implementation you mean physical implementation?
>
> A. Correct.

Id. at 55:6-13.

B. <u>Term B: "a second step of determining whether when indoor system ID information is received by the data communication terminal and the received indoor system ID information is identical to indoor system ID information stored in the location register"</u>

KAIFI's Proposed Construction	Verizon's Proposed Construction
"a second step of determining whether the received indoor system ID information is identical to indoor system ID information stored in the location register when indoor system ID information is received by the data communication terminal."	Indefinite.

The "second step" of Claim 12, when understood in the context of the remaining steps of the claim and the specification as a whole, informs a person of skill in the art about the scope of the invention with reasonable certainty. There is no reason for the Court to revisit the indefiniteness issue or revise its original construction.

The Court previously construed this term to mean "a second step of determining whether the received indoor system ID information is identical to indoor system ID information stored in the location register when indoor system ID information is received by the data communication terminal." *See* AT&T Case Dkt. No. 104 at pp. 52-53. The Court expressly found that this term was not indefinite. *Id.* at p. 53. KAIFI proposes the identical construction here.

The disputed "second step" term is present in Claim 12 of the '728 Patent:

> An internet network connecting and roaming method for providing internet communication service to a data communication terminal of a user moving indoors or outdoors using an outdoor wireless internet network including an antenna, a router and a location register, and an indoor network including an indoor gateway connectable with an internet network, the method comprising:
>
> a first step of providing the user with a communication service by connecting with the outdoor wireless internet network when the user is located outdoors;
>
> **a second step of determining whether when indoor system ID information is received by the data communication terminal and the received indoor system ID information is identical to indoor system ID information stored in the location register;**
>
> a third step of going through authentication of an indoor location of the data communication terminal by the location register and storing the indoor location into the location register if it is determined in the second step that the two of ID information are equal to each other;
>
> a fourth step of connecting with the internet network by switching connection of the data communication terminal from the outdoor wireless internet network to the indoor gateway and making wireless communications through the indoor gateway and an indoor wireless connection module;
>
> a fifth step of, when the data provided from the internet network in accordance with location information stored in the location register are transferred to the

> indoor gateway, supplying the data communication terminal with the data through the indoor gateway and the indoor wireless connection module;
>
> a sixth step of going through authentication of an outdoor location of the data communication terminal by the location register and storing the outdoor location into the location register when the indoor system ID information is not received; and
>
> a seventh step of switching the connection of the data communication terminal from the indoor gateway to the outdoor wireless internet network and performing the first step again.

'728 Patent, Claim 12 (emphasis added).

The Court's previous conclusion that "this step describes determining whether the received and stored indoor system ID information are identical when the information is received by the DCT" was correct, for the very reasons set forth in the Court's analysis of this term from the AT&T Case:

- A description of the second step in the abstract confirms the Court was correct: "a second step of determining whether the received indoor system ID information is identical to indoor system ID information stored in the location register when indoor system ID information is received by the data communication terminal" '728 Patent at Abstract.
- As seen above, the third step in Claim 12 confirms that the was Court's correct: "if it is determined in the second step that the two of ID information are equal to each other." '728 Patent, Cl. 12.
- The specification confirms that the Court was correct: "[i]n order to determine whether the wireless internet terminal is located indoors or outdoors, the wireless internet terminal determines whether ID information of an indoor system broadcasted from the indoor gateway is received, and in particular, whether the received ID information of the indoor system is equal to the stored ID

information." '728 Patent at 3:16–22, *see also id.* at Abstract; 9:40–44; 10:1–9; 11:34–42.

To the extent that Verizon is advancing the same indefiniteness argument advanced by the defendants in the AT&T Case – *i.e.*, that the usage of the phrase "whether when" renders this term indefinite to a POSITA, they are incorrect. From the context and descriptions in the patent, including the claim itself, as confirmed by Dr. Kelley, Mr. Blackburn, and the Court, this language would simply not confuse a person of ordinary skill in the art. *See, e.g.*, Blackburn Verizon Decl. at ¶ 55; *see also* AT&T Case Dkt. No. 104 at pp. 53.

A claim is not indefinite where it "inform[s] those skilled in the art about the scope of the invention with reasonable certainty." *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 910 (2014). This standard "mandates clarity, while recognizing that absolute precision is unattainable." *Id.* at 910. There is nothing confusing or unclear about this claim language. Blackburn Verizon Decl. at ¶ 54. This step unambiguously states a certain time – the "when" – and an action that occurs during that time – "determining whether … the received indoor system ID information is identical to indoor system ID information stored in the location register." *Id*. Put another way, this describes determining *whether* the received system ID information and stored system ID information are identical *when* the indoor system ID information is received by the data communication terminal. *Id.* This is exactly what the Court found in the AT&T Case: "a person of ordinary skill in the art would understand that this step describes determining *whether* the received and stored indoor system ID information are identical *when* the information is received by the DCT." *See* AT&T Case Dkt. No. 104 at pp. 52 (emphasis in original); *see also* Blackburn Verizon Decl. at ¶ 54.

Accordingly, this term is not indefinite, and the correct understanding that a person of ordinary skill in the art would have of this term as used in the '728 Patent is "a second step of determining whether the received indoor system ID information is identical to indoor system ID information stored in the location register when indoor system ID information is received by the data communication terminal." AT&T Case Dkt. No. 104 at 53. "This construction is correct because it comports with the claim language and the specification." *Id.* at 53, *citing Funai Elec. Co. v. Daewoo Elecs. Corp.,* 616 F.3d 1357, 1372 (Fed. Cir. 2010) ("An ungainly claim is not thereby indefinite, when its meaning can be understood by a person experienced in the field of the invention, on review of the patent documents.").

III. CONCLUSION

For the forgoing reasons, KAIFI respectfully requests that the Court adopt its proposed claim construction positions.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

I certify that the foregoing document was filed electronically on May 12, 2021 pursuant to Local Rule CV-5(a) and has been served on all counsel who have consented to electronic service.

/s/ Robert Christopher Bunt

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